

## CHAPTER 6

## CONVOY DEFENSE TECHNIQUES

The motor transport commander must ensure that his troops are trained in convoy defense techniques. The payoff is reduced vulnerability to hostile action and successful mission accomplishment. The damage a convoy incurs when attacked depends on the adequacy of convoy defense training. It also depends on the adequacy of the briefing that convoy personnel receive before the operation (Appendix Q).

Some elements of convoy defense training are routine. The key is to train to react rapidly to any situation. Successful accomplishment of your mission and your life depend on it.

This chapter covers a broad range of convoy defense techniques to be employed against a variety of threats. Keep in mind that Chapter 3 discussed the threat

**6-1. AIR ATTACK.** The air threat varies from UAV, cruise missiles, and armed helicopters to high-performance aircraft. Convoys face the greatest danger of an air attack while moving along open roads or during halts where there is little or no overhead cover.

An air attack is a type of ambush. Accordingly, many of the procedures used during a ground ambush also apply to the air attack. For example, the convoy commander must--

- Prescribe alarm signals (unit SOP) (see FM 44-3 for more information on alarms).
- Give instructions for actions to take when under attack.
- Prescribe actions to take in the absence of orders.
- Ensure that defense procedures are rehearsed.
- Review the procedures with convoy personnel before the convoy moves out.

The convoy commander should remember that enemy pilots will seek out and try to surprise the convoy. They will fly at a low, terrain masking altitude. If they attack from higher than 350 meters, small arms fire will have no effect against them, but air defense weapons can be used against them effectively. Enemy pilots will also fly at high speed to make air defense weapons and small arms fire less effective.

a. **Active Defense.** The amount of fire a logistical convoy can bring to bear on attacking aircraft is extremely limited. It is limited to the number of vehicles with mounted machine guns and the individual weapons of operators and passengers. Although the convoy is not totally defenseless, it is no match for a skilled pilot in a modern ground attack jet aircraft. The convoy's capability to defend itself is slightly better against the slower and sometimes more vulnerable ground attack helicopter. At best, the convoy without air defense protection is extremely limited in its ability to defend against air attack.

The key to effective small arms fire against aircraft is volume. Put up a large volume of fire with small caliber weapons. Volume small arms fire comes from knowing the effectiveness of small arms fire on low-flying aircraft. Training ensures accuracy and builds confidence.

(1) **Firing positions.** Except for the prone position, the riflemen's basic firing stances stay the same (Figure 6-1). Firing at aircraft from the prone position means the firer is lying on his back, aiming his rifle into the air. Maximum use of cover and concealment is essential. A crew served weapons gunner should fire from a protected position if possible. He needs to get the weapon up in the air. He can hold it up or use a support for his arms and the weapon. In a real emergency, another soldier can act as a hasty firing support.

(2) **Tips for small arms defense.** The following are tips for small arms defense:

- Shoot any attacking aircraft or unauthorized UAV.
- Fire at the nose of an aircraft; fire at the fuselage of a hovering helicopter or slightly above the nose of a moving helicopter.
- Fire in volume--everybody shoots.
- Lead aircraft crossing your position (M16 and M60 lead jets the length of one football field).
- Take cover if time allows.
- Support your weapon if possible.
- Lie on your back if caught in the open.
- Aim mounted machine guns slightly above the aircraft nose for head-on targets.
- Control small arms fire so attacking aircraft flies throughout it.

b. **Passive Defense.** For a logistical convoy, normally without significant air defense firepower, passive measures are most effective. The key is to prevent attacks by hostile aircraft.

(1) **Dispersion.** The formation used by the convoy is a type of passive defense. The convoy commander must decide whether to use an open or closed column. The distance between vehicles must not be fixed. It should vary from time to time during a march. Factors influencing selection of the best vehicle distance include:

- Mission.
- Cover and concealment along the route.
- Length of the road march.
- Type of road surface.
- Types of vehicles.
- Nature of cargo.
- Enemy threat (ground and air).
- Available defense support.
- Small arms potential.

(2) **Open column.** Open column convoys generally maintain an 80- to 100-meter distance between vehicles. This formation offers an advantage of fewer vehicles damaged by air-to-ground rockets, cannons, or cluster bomb units. However, open columns make control more difficult for the convoy commander when it is necessary to give orders to stop, continue, disperse and seek concealment, or engage aircraft. The column may be more susceptible to attack. It is exposed for a

longer period and, if attacked, its defense is less effective since its small arms fire is less concentrated.

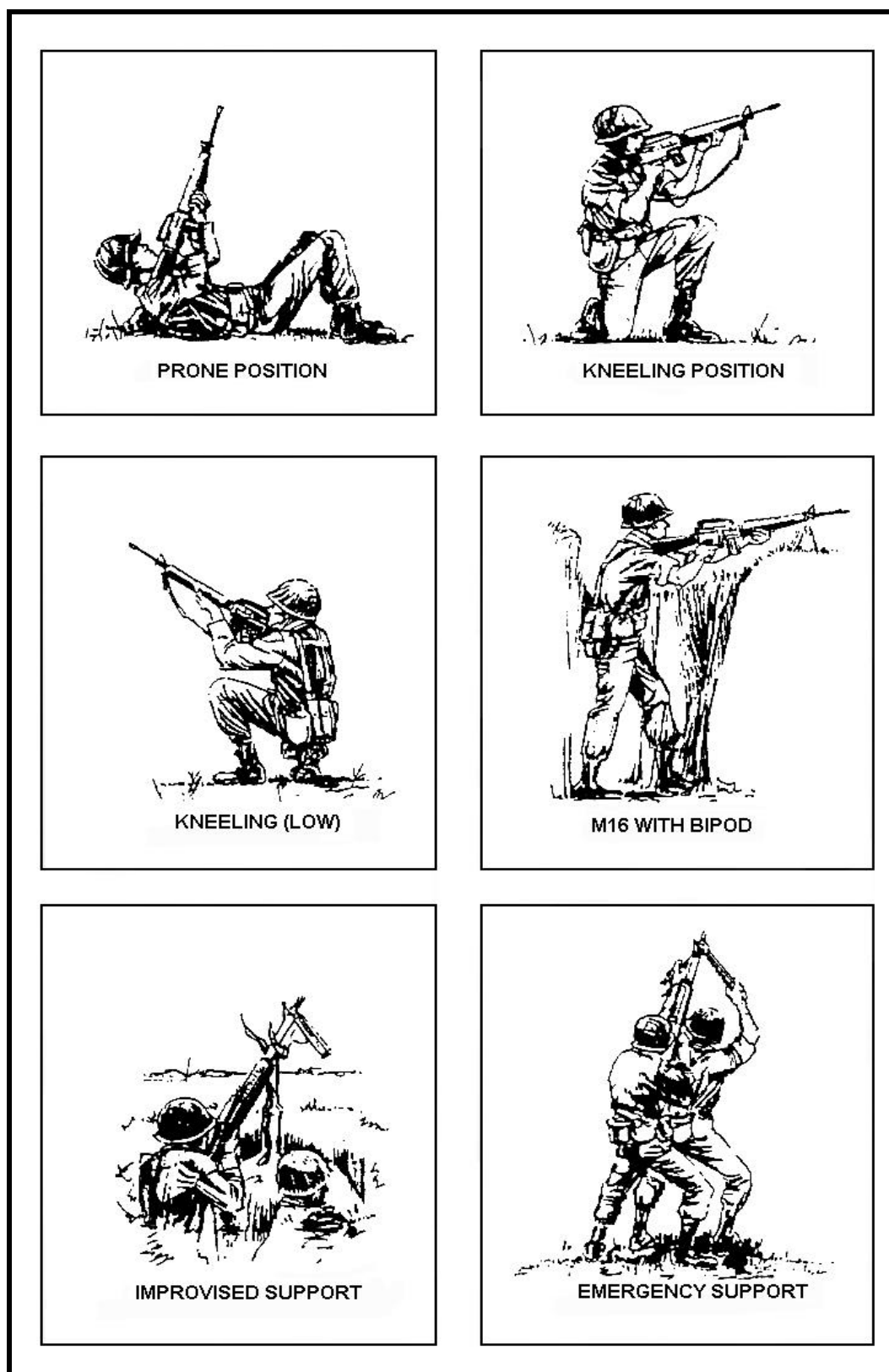


Figure 6-1. Firing positions

(3) **Close column.** Close columns maintain a distance of less than 80 meters between vehicles. This formation has none of the disadvantages noted for the open column formation. However, presenting a bunched up target could be an overriding disadvantage. Where an air attack is likely, it may be wise for the convoy commander to move close column convoys only at night.

(4) **Camouflage and concealment.** Camouflage and concealment techniques can make it more difficult for the enemy to spot the convoy. Not much can be done to change the shape of a vehicle moving down the road, but the type of cargo can be disguised or concealed by covering it with a tarpaulin. Bulk fuel transporters (tankers) are usually priority targets. Rigging tarps and bows over the cargo compartment conceals the nature of the cargo from the enemy pilot. The following are other effective passive measures:

- The operator should look for a bush, tree, or some other means of concealment to break the shape as seen from the air (Figure 6-2).
- Smooth surfaces and objects, such as windshields, headlights, and mirrors, will reflect light and attract the pilot's attention. Camouflage or cover all shiny items before the convoy moves out.
- If vehicles are not already painted in a pattern to blend with the terrain and to break the outline, mud can be used to achieve this effect.

(5) **Air guard duties.** Assign air guard duties to specific individuals throughout the convoy, and give each specific search areas. If the road march lasts more than an hour, soldiers should take shifts at air guard duty. Scanning for a long period dulls the ability to spot aircraft. Seeing the enemy first tips the odds in favor of the convoy, giving it time to react. See FM 44-3 for search and scan procedures.

(6) **Communications security.** Today's communications equipment can be very useful for controlling convoys, but it can also help enemy pilots find you. Use the radio only when necessary and be brief. See Appendix S for added COMSEC precautions.

c. **Passive Reactions.** When aircraft are spotted or early warning is received, the convoy commander has three options: stop in place, continue to march, or disperse quickly to concealed positions (Figure 6-3, page 6-6).

If the convoy commander chooses to halt the convoy, the vehicles simply pull to the shoulder of the road in a herringbone pattern. This technique has several advantages:

- It is harder for the enemy pilot to see the convoy when it is halted than when it continues to move.
- It is easy to continue the march after the attack.
- The volume and density of organic weapons will be higher than if the convoy disperses.

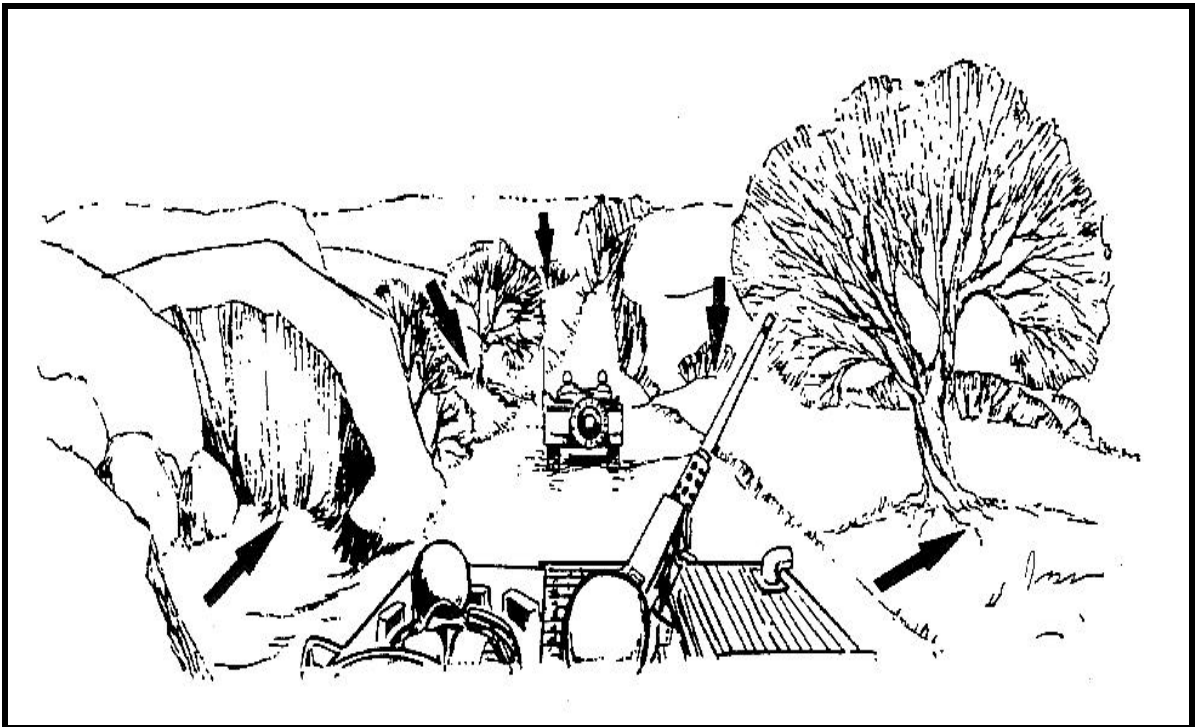
A disadvantage to this option is that a convoy stopped on the open road makes a good target and an enemy attack has a better chance of causing greater damage to the unit.

The mission and/or terrain may dictate that the march continue. If this is the case, convoy speed should be increased. Continuing the march offers the advantage of presenting a moving target, making it more difficult for the enemy to hit. However, detection is easier and volume and density of small arms fire are reduced.

A simple technique to disperse vehicles is to establish a method in the SOP that, in the event of an attack, odd-numbered vehicles go to the left and even-numbered vehicles go to the right. The key to dispersion is not to make two straight lines out of what was one long line; the vehicles must be staggered (Figure 6-4, page 6-6). This should not be much of a problem if the drivers have been trained to go to trees, bushes, folds in the ground, and so forth, that will give concealment. Once the convoy is dispersed, all personnel, except for vehicular-mounted weapon gunners, dismount and take up firing positions.

Advantages of this option are that it is more difficult for the enemy pilot to detect the vehicles and get multiple hits. However, this method has several disadvantages:

- It is easier for the enemy pilot to spot the convoy as it begins to disperse.
- The volume and density of small arms fire are reduced.
- It takes longer to reorganize the convoy after the attack.



**Figure 6-2. Dispersing vehicles seek cover for protection against air observation**

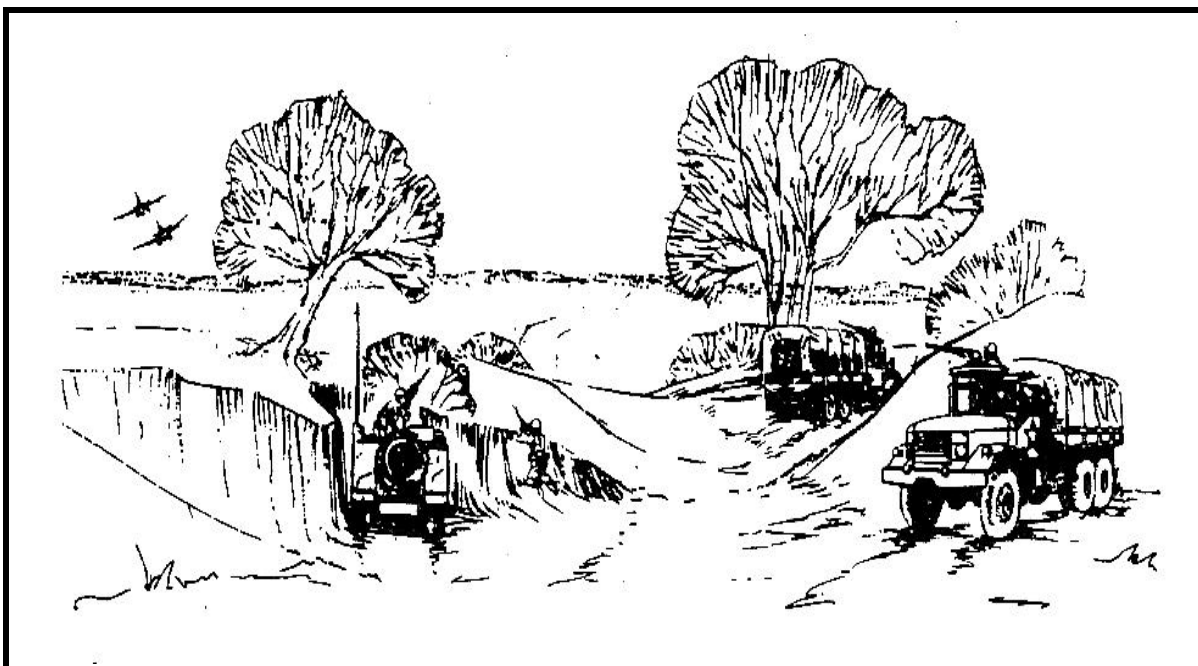


Figure 6-3. Dispersed vehicles in concealed positions



Figure 6-4. Vehicles moving to dispersed positions on road shoulders

**6-2. ARTILLERY OR INDIRECT FIRE.** Enemy artillery units or indirect fire weapons may be used to destroy logistical convoys or to harass and interdict the forward movement of supplies and personnel. Artillery fires are either preplanned fires or fires called in and adjusted on a target of opportunity by a forward observer. Of the two, the adjusted fires present the most complex problem as the artillery barrages can be adjusted to follow the actions of the convoy.

a. **Active Defense.** Active defensive measures against artillery are extremely limited but must not be overlooked. Active measures include--

- Directing counterbattery fire if the direction and approximate distance to the enemy artillery can be estimated.
- Directing small arms fire or artillery fires against the enemy FO if he can be located.
- Coordinating air strikes against the enemy artillery.

b. **Passive Defense.** The formation in which the convoy moves can be a type of passive defense. See the discussion of open and closed convoys under Passive Defense for Air Attacks. The convoy commander has three options when confronted with incoming artillery rounds: halt in place, continue to march, or disperse quickly to concealed positions. Regardless of the option selected, the actions to be taken and the signal directing the action should be covered in the unit SOP. The primary consideration is the immediate departure from the impact area.

The convoy should only be halted when the artillery concentration is ahead of the convoy. The convoy commander should look for an alternate route around the impact area and the convoy should remain prepared to move out rapidly.

The mission or terrain may require the convoy to continue. If this is the case, increase speed and spread out to the maximum extent the terrain will allow. Casualties can be reduced by avoiding the impact area, increasing speed, wearing protective equipment, using the vehicle for protection, and increasing dispersion.

**6-3. SNIPER FIRE.** Take extreme caution when sniper fire is received to ensure that any return fire does not harm friendly troops or civilians in the area. The best actions are passive. Ensure all personnel wear Kevlar helmets and available body armor at all times. All vehicles should move through the area without stopping. Escort personnel should notify the march element commander by giving a prearranged signal, like a smoke grenade thrown in the direction of fire, and attempt to locate and destroy the sniper by long-range fire if in a free-fire zone.

NOTE: Prevent convoy personnel from random firing by designating personnel to return fire. Do not return fire in a no-fire zone.

The convoy commander may order additional fire or supporting forces into the area to destroy, capture, or drive off the sniper. Convoy personnel should be aware that a heavy volume of fire is frequently used by the enemy to slow down a convoy before an ambush.

NOTE: Remember all details so the incident can be reported to higher headquarters.



**6-4. AMBUSH.** This paragraph provides guidance in developing and employing counterambush tactics and techniques. The very nature of an ambush--a surprise attack from a concealed position--places an ambushed unit at a disadvantage. Combat situations may prevent a convoy from taking all the measures necessary to avoid being ambushed. Therefore, a convoy must take all possible measures to reduce its vulnerability. These are passive measures supplemented by active measures taken to destroy or escape from an ambush. For information on the types of ambushes, see FM 21-75.

No single defensive measure, or combination of measures, will prevent or effectively counter all ambushes in a situation. The effectiveness of counterambush measures is directly related to the state of training of troops and the leadership ability of the leaders.

The best defense is to avoid being ambushed. Take the following actions to avoid an ambush:

- Select the best route for your convoy.
- Make a map reconnaissance.
- Make a ground reconnaissance.
- Make an aerial reconnaissance.
- Obtain current intelligence information.
- Use OPSEC to deny the enemy foreknowledge of the convoy.
- Do not present a profitable target.
- Never schedule routine times or routes.

Take the following actions to reduce the effectiveness of ambushes:

- Harden vehicles.
- Cover loads.
- Space prime targets throughout the convoy.
- Wear protective clothing.
- Use assistant drivers.
- Carry troops and supplies.
- Use prearranged signals to warn the convoy of an ambush.
- Use escort vehicles (military police, tanks, armored vehicles) or gun trucks.
- Thoroughly brief all convoy personnel on immediate action drills.
- Practice immediate action drills.
- Maintain the interval between vehicles.
- Move through the kill zone, if possible.
- Stop short of the ambush.
- Do not block the road.
- Rapidly respond to orders.
- Aggressively return fire.
- Counterattack with escort vehicles.
- Call for artillery support.
- Call in TACAIR support.
- Call for the reserve force.

- In the event of ambush during night convoy operations under blackout drive, turn on service drive lights and increase speed to clear the ambush area. Be aware that drivers wearing night vision goggles will be temporarily blinded when service drive is turned on.

a. **Road Not Blocked.** Guerrillas are seldom able to contain an entire convoy in a single kill zone. This is due to the extensive road space occupied by even a platoon-size convoy and because security or lack of available forces may limit the size of the ambushing force. More often, a part of a convoy is ambushed--either the head, tail, or a section of the main body. That part of the convoy that is in the kill zone and receiving fire must exit the kill zone as quickly as possible if the road to the front is open. Vehicles disabled by enemy fire are left behind or, if blocking the road, pushed out of the way by following vehicles. Armored escort vehicles must not block convoy vehicles by halting in the traveled portion of the road to return fire.

Vehicles that have not entered the kill zone must not attempt to do so. They should stop and personnel should dismount, take up a good defensive position, and await instructions. Since escort vehicles may have left the road to attempt to overrun a hostile position, elements of the convoy should not fire on suspected enemy positions without coordinating with the escort forces.

Other actions that convoy personnel can take to neutralize the ambush force include:

- Call for artillery fire on enemy positions.
- Call for gunship or tactical air or army aviation fire on enemy positions.
- Direct gun trucks and other vehicles mounted with weapons to lay down a heavy volume of fire on the ambush force.
- Call for reaction forces.
- Direct all nondriving personnel to place a heavy volume of fire on enemy forces as rapidly as possible as vehicles move out of the kill zone.

NOTE: Vehicles must keep their distance to reduce the number of vehicles in the kill zone.

A motor transport convoy with a limited escort is seldom able to defeat a hostile force and should not attempt to do so. When part of the convoy is isolated in the kill zone, vehicles that have not entered the ambush area must not attempt to do so. They should stop; personnel should dismount, take up a good defensive position, and await instructions until supporting forces have cleared the ambush. Normally, a transport unit will not deploy to attack a hostile force unless it is necessary to prevent destruction of the convoy element. It relies on supporting air, artillery, escorts, and reaction forces.

b. **Road Blocked.** When an element of a convoy is halted in the kill zone and is unable to proceed because of disabled vehicles, a damaged bridge, or other obstacle, personnel will dismount, take cover, and return a maximum volume of fire on enemy positions. When dismounting, exit the vehicle away from the direction of enemy fire. Security/escort troops from vehicles that have passed through the ambush area dismount and lay down a base of fire on the ambush position. Reaction forces should be called in as soon as the ambush attack is launched. When a security escort is provided and a combat emergency arises, the escort commander has operational control of the security element to attack and neutralize the hostile force. Normally, the security force will take action to neutralize the ambush while the convoy escapes from the kill zone. In an ambush situation, immediate reaction and aggressive leadership are essential to limit casualties and damage to vehicles, cargo, and personnel. If immediate air or artillery support is available, personnel will be restricted to a specified distance from the road to avoid casualties from friendly fire. In this situation, personnel

in the kill zone establish a base of fire, while others take up defensive positions away from their vehicles and wait while supporting fire is called in on the enemy positions. Fire in the kill zone may be from only one side of the road with a small holding force on the opposite side. To contain the convoy element in the kill zone, mines and booby traps are frequently placed on the holding force side. The security escort must take care in assaulting the main ambush force as mines and booby traps are commonly used to protect its flanks.

When the enemy is dislodged, the road must be cleared and convoy movement resumed as soon as possible. Wounded personnel are evacuated using the fastest possible mode. When disabled vehicles cannot be towed, their cargo should be distributed among other vehicles if time permits. When it is not feasible to evacuate vehicles and/or cargo, they will be destroyed upon order from the convoy commander. If at all possible, radios and other critical items will be recovered before the vehicles are destroyed. Under no circumstances will they be allowed to fall into enemy hands.

c. **Mines and Booby Traps.** Mines and booby traps are frequently part of an ambush. Command-detonated mines are often used to start an ambush. Mines will also be planted along the shoulder of the road for harassment and interdiction. A booby trap system may be used against personnel in vehicles and could consist of hand grenades. Claymore mines or artillery shells may be suspended from trees and command-detonated when a vehicle passes.

The following guidelines have proven effective in decreasing damage by mines in convoy operations:

- Track the vehicle in front.
- Avoid driving on the shoulder of the road.
- Whenever possible, do not run over foreign objects, brush, or grass in the road.
- Avoid fresh earth in the road.
- Watch local national traffic and the reactions of people on foot. (They will frequently give away the location of any mines or booby traps.)
- When possible, arrange for the engineers to sweep the road immediately before the convoy is scheduled to move over it.
- Use heavy vehicles such as tanks to explode small mines when deployed in front of the convoy.
- Harden vehicles.
- Wear protective equipment.

**6-5. NUCLEAR, BIOLOGICAL, OR CHEMICAL ATTACKS.** Chemical agents can be disseminated by artillery fire, mortar fire, rockets, missiles, aircraft spray bombs, grenades, and land mines. Always be alert because agents may already be present on the ground or in the air. Chemical agents are substances in either gaseous, liquid, or solid form. To protect against an NBC attack, you need to know how those agents may affect your body if they are used against you. Take defensive actions according to local directives and SOPs. For detailed information on defense against NBC warfare, see FMs 3-4, 3-5, and 3-100.